

REMARKS / ARGUMENTS

Examiner Do is thanked for the thorough examination of the subject Patent Application. The claims have been carefully reviewed and amended, and are considered to be in condition for allowance.

It is the objective of this invention to provide a multichannel digital filter bank circuit and a method implemented by cascading sub-filters of the recursive type suitable for graphically equalizing electrical signals received via a communication path. It is also an objective of this invention to produced equalized signals having minimal distortion of signal spectral characteristics including magnitude and phase. The circuit of this invention is implemented with cascaded connections of first order or second order digital filters. It is an additional objective of this invention to provide for the programming of the individual transfer functions of the above digital filters so as to produce unity gain. This unity gain case results in an output signal which is an exact replica of the input signal with no delay. This result indicates the minimal distortion introduced by the method of this invention.

A addition to figure 4 of the instant application has been submitted to allow the drawings to show every feature of the invention specified in the claims. The structure of the transfer functions of claims 2 and 3 has been added to figure 4.

Reconsideration of the rejection of claims 3 and 6, because of informalities, is requested based on the following.

Claim 3 has been corrected by adding a period at the end of the claim. Claim 6 already had a period at the end of the claim.

Reconsideration of the rejection of claims 1-6, under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter, is requested based on the following.

Independent claims 1 and 4 have been amended to include the language 'whereby said electrical signals are enhanced, attenuated or kept the same', thus claiming that the digital filter bank of Claim 1, and method of Claim 4, perform a physical transformation on the input electrical signals. These amendments to independent claims 1 and 4 are sufficient to allow claims 2, 3, 5, and 6 to satisfy the statutory subject matter requirement.

Reconsideration of the rejection of claims 1 and 4, under 35 U.S.C. 102(e) as being anticipated by Tan et al. (US Patent 6,233,594), is requested based on the following.

Tan et al. involves filters with multiple sampling frequencies. In Tan, the second sampling frequency is less than the first sampling frequency. Similarly, the third sampling frequency is less than the second sampling frequency. The filter described in Tan et al. is more complex than the instant application, as is shown in claim 1 as amended below.

A multichannel digital filter bank implemented by cascading sub-filters of the recursive type suitable for graphically equalizing electrical signals received via a communication path having minimal distortion of signal spectral characteristics including magnitude and phase nor does this method introduce additional delay to the signal comprising:

a plurality of first order or second order digital filters, connected in a cascade fashion, whereby said electrical signals are enhanced, attenuated or kept the same.

The simplicity of the first order and second order filters in the instant application allows filtering without additional delay to the inbound signal as stated in claim 1 above. Tan et al. does not state explicitly that there is no additional delay to the inbound signal. In addition, the invention as claimed does not require multiple sampling frequencies as utilized in Tan.

Reconsideration of the rejection of claims 2 and 5, under 35 U.S.C. 102(b) as being anticipated by Dyer (US Patent 4,947,360), is requested based on the following.

Figures 1 and 2 of Dyer show stages of sub-filter of a recursive filter. Dyer includes three different types of filters. These include sub-filters, all-pass filter, and T-section filter. Each have unique transform equations. The design of Dyer is much more complex than the claimed invention. Also, Dyer does not explicitly indicate that there is no additional delay to the inbound signal. The instant application, as is shown in claim 1 as amended below, illustrates the simpler implementation utilizing one type of sub-filter of the recursive type instead of the three types of filters used in Dyer.

A multichannel digital filter bank implemented by cascading sub-filters of the recursive type suitable for graphically equalizing electrical signals received via a

communication path having minimal distortion of signal spectral characteristics including magnitude and phase nor does this method introduce additional delay to the signal comprising:

a plurality of first order or second order digital filters, connected in a cascade fashion, whereby said electrical signals are enhanced, attenuated or kept the same.

The above amended claim 1 of the claimed invention also explicitly states that the instant application does not introduce additional delay to the incoming signal. However, Dyer does not explicitly state that no additional delay to the incoming signal.

Reconsideration of the rejection of claims 3 and 6, under 35 U.S.C. 102(b) as being anticipated by Cox et al. (US Patent 5,353,346), is requested based on the following. Cox et al. is primarily a signal classifier. Cox uses a series of notch filters to separate an inbound signal into separable components. Cox does not teach the simple filtering techniques of the instant application. Cox does not explicitly state that there is no additional delay to the inbound signal. The instant application, as is shown in claim 1 as amended below, illustrates the simpler implementation utilizing one type of sub-filter of the recursive type instead of complex separation of the inbound signal using multiple notch filters used in Cox.

A multichannel digital filter bank implemented by cascading sub-filters of the recursive type suitable for graphically equalizing electrical signals received via a communication path having minimal distortion of signal spectral characteristics including magnitude and phase nor does this method introduce additional delay to the signal comprising:

a plurality of first order or second order digital filters, connected in a cascade fashion, whereby said electrical signals are enhanced, attenuated or kept the same.

The above amended claim 1 of the claimed invention also explicitly states that the instant application does not introduce additional delay to the incoming signal. However, Cox does not explicitly state that no additional delay to the incoming signal.

We have reviewed the related art references made of record and agree with the Examiner that none of these suggest the present claimed invention.

The examiner is thanked for the thorough review of this patent application. The changes to the specification do not introduce any new matter.

It is requested that should there be any problems with this Amendment, please call the undersigned Attorney at (845) 452-5863.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'SBA', with a long horizontal stroke extending to the right.

Stephen B. Ackerman, Reg. No. 37,761

Attachment

Amendments to the Drawings:

The attached sheet of drawings includes a replacement sheet for Figure 3 and Figure 4.

Attachments: 1 Replacement Sheet